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ABSTRACT

This paper suggests implementation of a technology-teacher training model as part of existing higher education teacher-education and institutional faculty development programs. Human resources and individual colleges/departments can use this approach to enhance teaching and learning. The underlying problem it addresses is the curriculum technology gap between advanced teaching delivery systems and preparation of faculty to use them for maximizing student teacher learning. This technology training framework is applicable to both public schools and higher education. It involves creating a triage method for easily determining learner technology experience, and it views the learning process as a continuum. It also involves creating three training levels: 1) the technology assistant level that teaches educators the skills for basic computer and telecommunications operation; 2) the technology teacher level that empowers teachers with skills and knowledge so they can evaluate software and some multi-media hardware for appropriateness to the school curriculum (this level teaches skills to create state-of-the-art lesson plans and presentations); and 3) the technology leader level that has individuals experience various training activities and become confident in using technology. The leaders provide local expertise and guidance to schools. The three training steps build upon one another, with the teacher becoming more proficient at each level. The model has equal applicability in the public schools. (SM)

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Curriculum & Technology: Integration Through Modeling

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Abstract

This paper suggests a technology-teacher training model be implemented as part of existing higher education teacher-education and institutional faculty development programs. Human Resources and individual colleges/ departments can use this approach as a simple method of enhancing teaching and learning. It offers a service to the growing educational technology-based networks emerging across the country. The underlying issue is the curriculum technology gap between these advanced teaching-delivery systems and the preparation of faculty to use them to maximize student [teacher] learning. This technology training framework would involve creation of three training categories, Technology Assistant, Technology Teacher, and Technology Leader. The model has equal applicability in the public schools.

Introduction

This paper suggests a model for technology-teacher training that can be implemented as

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part of existing higher education and public school staff development programs. This model will offer a needed service to the growing university, college, and school technology-based classroom instructional networks emerging across the country.

Background

The opportunities presented by emerging technologies for the school curriculum and technology are clear and positive. Technology allows real time communication across great distances. Communities heretofore isolated from lifelong learning experiences can be reached through technology. Educators can reach into the rural areas by facilitating learning at several remote classrooms at the same time via interactive television. The challenge for teacher educators is to develop a capability to maximize the use of various technologies in the instructional course preparation of public school teachers. This challenge exists not only for the preparation of the next generation of classroom teachers, but also in regards to those who are using technology in the classroom today. Both as a student facilitator and as a trainer of teachers, the technology-teacher must create learning situations which maximize interactive technologies.

Few studies exist that report on the state of teacher training in technology. There have been no national surveys regarding teacher training over full motion two way fiber optic interactive television. One recent survey dealing with technology training in schools reported that little training was to be had dealing with the interaction between curriculum and technology. Most of the training deals instead with specific hardware and software rather than technology as a tool. Electronic Learning (1995) reported, "Teacher in service has to model how to use technology in the teaching and learning process" (pp. 44-45). This state of affairs does exist in

the public schools.

Technology

Education technology is dynamic, yet enough information exists to make some assumptions about the emerging technological classroom. Technology with fiber optic lines as a delivery mode will dominate the field. Satellite and microwave facilities are monuments to obsolescence and will be relegated for use in only those areas where geography presents barriers to fiber construction. Satellite and microwave capability will be primarily used to leap over geographic barriers and connect with other fiber optic systems. The underlying issue is the curriculum technology gap between these advanced teaching-delivery systems and the preparation of teachers to use them so as to maximize student learning. This technology training model is not hardware or software specific, but universally applicable to any school, college, or training environment.

Curriculum

Discounting the issue of information overload in today's school programs, most existing curricula are dated and not fully usable over advanced technologies such as full motion two way fiber optic interactive television. A major overhaul is needed for these materials and lesson plans to be effectively used in the technology classroom. Two major curriculum technology needs emerging today are to 1) create systems which revise existing curricula without the revision process itself becoming a barrier, and 2) identify materials and methods which facilitate maximization of the technology based classroom learning experience.

Modeling

One solution to the problem of this curriculum-technology gap is the creation of a staff

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development system which can be adopted by all technology learners in universities, colleges, and public schools to train teachers, staff, and students to get the most from interactive technology. Part of this technology training framework would be the creation of a triage method for easily determining learner technology experience. A second part of the model involves the creation of three training levels, Technology Assistant, Technology Teacher, and Technology Leader. For example, school districts can become the training resource to their school sites by providing materials, referrals and technology consultants to the school sites. This technology training model framework is applicable both to the public schools and higher education. Using this training structure the school/college can triage the incoming teacher into learning groups based on previous experiences and education in computers and/or telecommunications hardware/software. This training structure facilitates placement of students (teacher) to the proper level. The sponsoring school saves time and money. This approach to training assignment views training needs as a continuum. The continuum is dynamic, flexible and makes the most of the previous technology experiences of the teacher. A locally developed assessment will quickly indicate which technology training level best serves the teacher.

Technology Assistant

The goal of the technology assistant level is to have the teacher possess skills where they can operate computer and/or telecommunications hardware, understand the basics of telecommunications theory [how the hardware works], and load and run appropriate software. Achieving mastery of this training level prepares the teacher to operate and run most hardware and computer software. The student will be able to assemble hardware and interpret software using manuals or under general supervision.

Technology Teacher

The goal of the technology teacher level is to empower the teacher with skills and knowledge that allow them to evaluate software for use in their classes and some multi-media hardware in terms of its appropriateness for the school curriculum. At the end of this training level the teacher can create lesson plans integrating various forms of computer media via telecommunications hardware. The teacher will have the skill to create state-of-the-art lesson plans and presentations that make full use of technology in the classroom. The teacher will be able to identify, acquire, evaluate, and assemble vendor based technology into integrated lesson plans without outside supervision or maintenance. The teacher is taught to use the technology with the latest classroom instructional strategies based in andragogy.

Technology Leader

The goal of the technology leader [faculty/teacher] is to push the capability of the technology-based classroom to the limit. This is facilitated by having the technology leader experience a number of training activities, i.e., cooperative learning through networking, creating multi-media lesson plans, using Internet as a classroom resource, building and using a paperless library. This process empowers the leader with learning experiences that build self-confidence in using technology. The leader can use this training as a vehicle to expand their college/school network to include schools that are not technology-based. This leader provides a local expertise and guidance to such schools. This is accomplished by easily replicating this model's triage-training steps. The leader becomes a technology coach guiding new faculty/teachers and students to appropriate sources for additional training. This is a good example of perpetuating the program without extensive additional costs in that the previous technology assistant and

technology teacher levels recruit new faculty/teachers and students to the program. However, it does mean that the technology leader will have to devote off-teaching time to successfully perform this important service. Each education entity will have to place value on this release time issue. This is a good example of perpetuating the program without extensive additional costs in that the previous technology assistant and technology teachers recruit new teachers and students to the program.

These training steps build one on the other. At each succeeding level the teacher becomes more proficient in understanding the place of technology in education; that of a tool that facilitates learning at the higher order thinking skills level. This modeling structure is flexible, expandable and easy to understand. The role of each training level is self-contained. A student (teacher) can start at any level and tailor the training experiences to meet local professional and classroom needs.

Next Step

Faculty/teachers, administrators, and staff development coordinators should examine this suggested technology training approach for possible adoption at their school or campus as a means to provide an efficient technology training program to their colleges and local schools. Local staff development programs could be easily expanded to offer curriculum revision support and multi-media material support for changing classroom instruction. This model could serve as a catalyst for addressing the issue of integrating curriculum and technology to produce compatible instructional activities. Today's kids are computer literate, information savvy and are interested in dynamic learning experiences. This model is one approach to help teachers adapt to this new kind of student.

Reference

Siegel, J. (1995). The state of teacher training. Electronic Learning, 14(8), 43-45, 48-53.

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